

Serial No. Not Yet Assigned
Atty. Doc. No. 2003P14050WOUS
Amendments To The Claims:
Please amend the claims as shown.

1 – 9 (canceled)

10. (new) A rotor blade for an axial flow gas turbine engine, comprising:

a blade root having a platform region;

a curved main blade profile surface which extends from the platform region of the root, the blade profile having a suction side, a pressure side, a blade height, a leading edge, and a trailing edge where the trailing edge is located down-stream of the leading edge with respect to an operative working fluid flow direction;

a first relief wall arranged parallel to a radial centerline of the blade and located in the main blade profile adjacent to the trailing edge, having a radially inner most edge and a radially outermost edge, and the first relief wall extends through the blade from the suction side to the pressure side of the main blade profile;

a second relief wall parallel to the first relief wall having a radially inner most edge and a radially outermost edge, and extends through the blade from the suction side to the pressure side of the main blade profile;

a third relief wall arranged between the radially inner most edges of the first and second relief walls extending through the blade from the suction side to the pressure side of the main blade profile; and

a fourth relief wall arranged between the radially outer most edges of the first and second relief walls extending through the blade from the suction side to the pressure side of the main blade profile, wherein the first relief wall, second relief wall, third relief wall and fourth relief wall collectively define a relief slot arranged in the trailing edge region of the main blade profile.

11. (new) The rotor blade as claimed in claim 10, wherein the relief slot is located from the leading edge 90% of the total distance from the leading to the trailing edge of the blade profile.

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12. (new) The rotor blade as claimed in claim 11, wherein the length of the relief slot is 5% to 10% of the blade height of the main blade profile.

13. (new) The rotor blade as claimed in claim 12, wherein the radially inner most end of the relief slot is located from the platform region 5% to 10% of the blade height.

14. The rotor blade as claimed in claim 13, wherein the relief slot radially inner most and outermost ends are rounded.

15. (new) The rotor blade as claimed claim 14, wherein the relief slot is filled with a filler material such that the pressure and suction side surfaces of the main blade profile are continuous and the filler material has a coefficient of thermal expansion less than or equal to that of the blade material.

16. (new) The rotor blade as claimed in claim 15, wherein the filler material is a solder.

17. (new) The rotor blade as claimed in claim 16, wherein the rotor blade material is single-crystalline or directionally solidified.

18. (new) The rotor blade as claimed in claim 16, wherein the rotor main blade profile is covered with a Thermal Barrier Coating.

19. (new) An axial flow gas turbine engine arranged about a central axis, comprising:
a rotor mounted such that it can rotate about the central axis;
an intake housing that intakes air;
a compressor section that compresses the air;
a combustion chamber that accepts the compressed air, introduces a fuel and combusts the fuel and compressed air to provide a hot working fluid; and
a turbine section that expands the hot working fluid having a plurality of turbine blades attached to the rotor, the turbine blades comprise:

a blade root having a platform region,

a curved main blade profile surface which extends from the platform region of the root, the blade profile having a suction side, a pressure side, a blade height, a leading edge, and a trailing edge where the trailing edge is located down-stream of the leading edge with respect to an operative working fluid flow direction,

a first relief wall arranged parallel to a radial centerline of the blade and located in the main blade profile adjacent to the trailing edge, having a radially inner most edge and a radially outermost edge, and the first relief wall extends through the blade from the suction side to the pressure side of the main blade profile,

a second relief wall parallel to the first relief wall having a radially inner most edge and a radially outermost edge, and extends through the blade from the suction side to the pressure side of the main blade profile,

a third relief wall arranged between the radially inner most edges of the first and second relief walls extending through the blade from the suction side to the pressure side of the main blade profile, and

a fourth relief wall arranged between the radially outer most edges of the first and second relief walls extending through the blade from the suction side to the pressure side of the main blade profile, wherein the first relief wall, second relief wall, third relief wall and fourth relief wall collectively define a relief slot arranged in the trailing edge region of the main blade profile profile.

20. (new) The gas turbine engine as claimed in claim 19, wherein the relief slot is located from the leading edge 90% of the total distance from the leading to the trailing edge of the blade profile.

21. (new) The gas turbine engine as claimed in claim 20, wherein the length of the relief slot is 5% to 10% of the blade height of the main blade profile.

22. (new) The gas turbine engine as claimed in claim 21, wherein the radially inner most end of the relief slot is located from the platform region 5% to 10% of the blade height.

23. The gas turbine engine as claimed in claim 22 wherein the relief slot radially inner most and outermost ends are rounded.

24. (new) The gas turbine engine as claimed claim 23, wherein the relief slot is filled with a filler material such that the pressure and suction side surfaces of the main blade profile are continuous and the filler material has a coefficient of thermal expansion less than or equal to that of the blade material.

25. (new) The gas turbine engine as claimed in claim 24, wherein the filler material is a solder.

26. (new) The gas turbine engine as claimed in claim 24, wherein the rotor main blade profile is covered with a Thermal Barrier Coating.